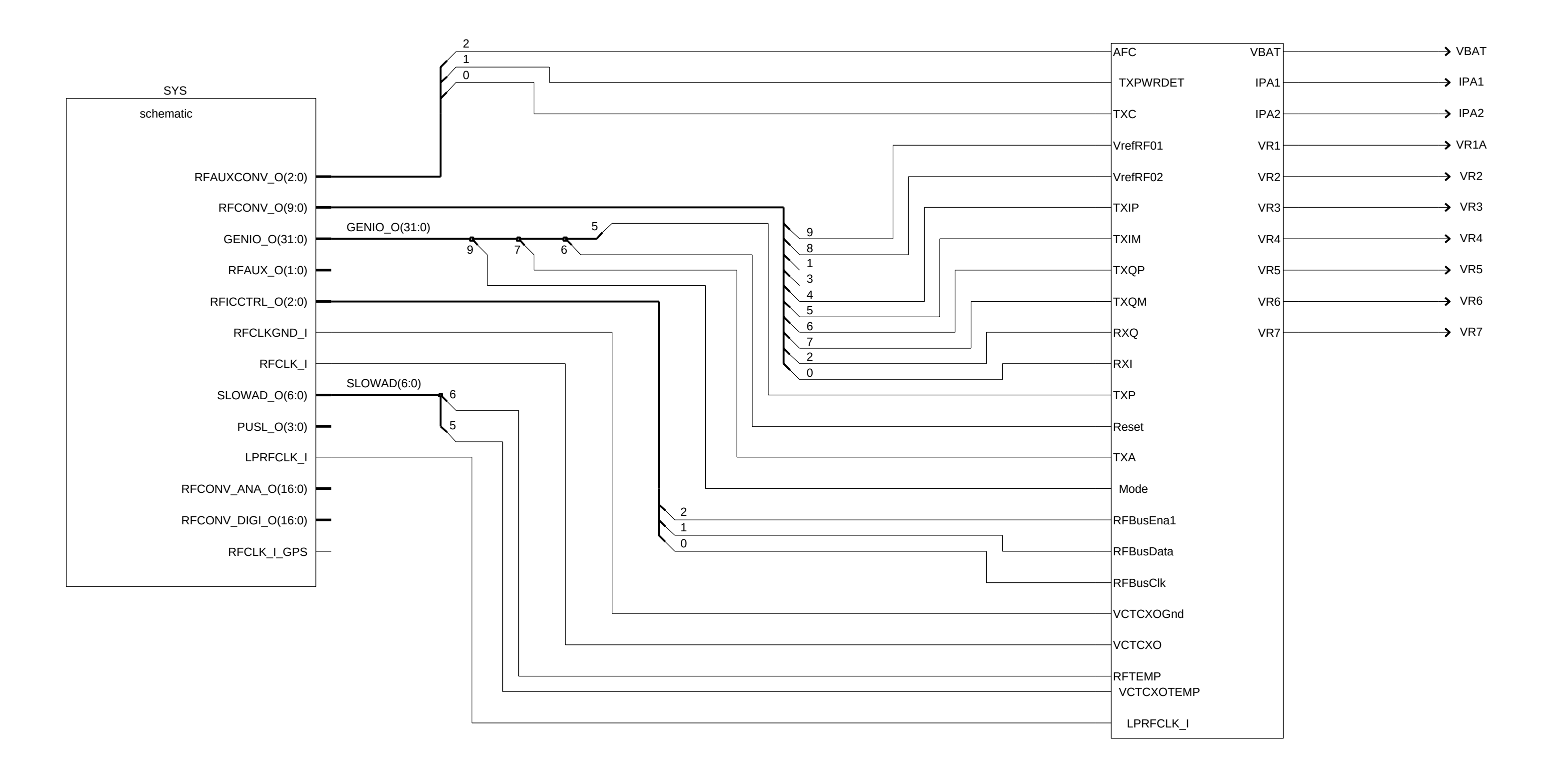
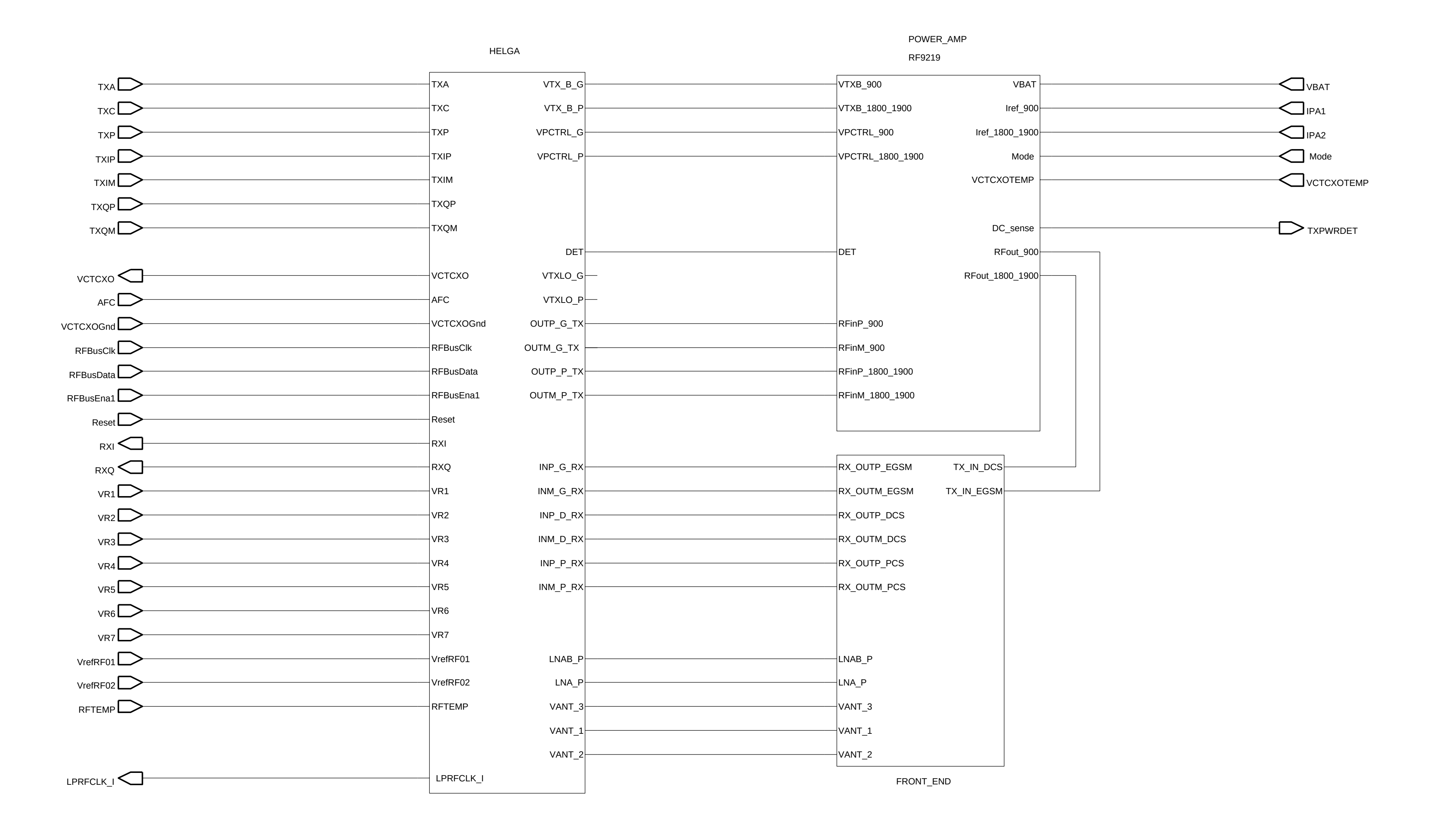
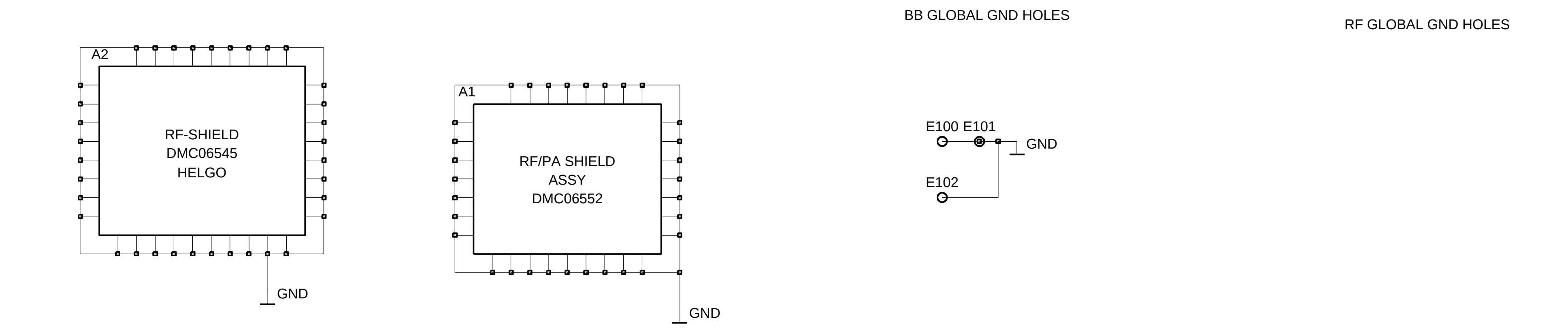
Top level


SYS
schematic
RFAUXCONV_O(2:0)
RFCONV_O(9:0)
GENIO_O(31:0)
RFAUX_O(1:0)
RFICCTRL_O(2:0)
RFCLKGND_I
RFCLK_I
SLOWAD_O(6:0)
PUSL_O(3:0)
LPRFCLK_I
RFCONV_ANA_O(16:0)
RFCONV_DIGI_O(16:0)
RFCLK_I_GPS
GENIO_O(31:0)
SLOWAD(6:0)
AFC
TXPWRDET
TXC
VrefRF01
VrefRF02
TXIP
TXIM
TXQP
TXQM
RXQ
RXI
TXP
Reset
TXA
Mode
RFBusEna1
RFBusData
RFBusClk
VCTCXOGnd
VCTCXO
RFTEMP
VCTCXOTEMP
LPRFCLK_I
VBAT
IPA1
IPA2
VR1
VR2
VR3
VR4
VR5
VR6
VR7
VBAT
IPA1
IPA2
VR1A
VR2
VR3
VR4
VR5
VR6
VR7

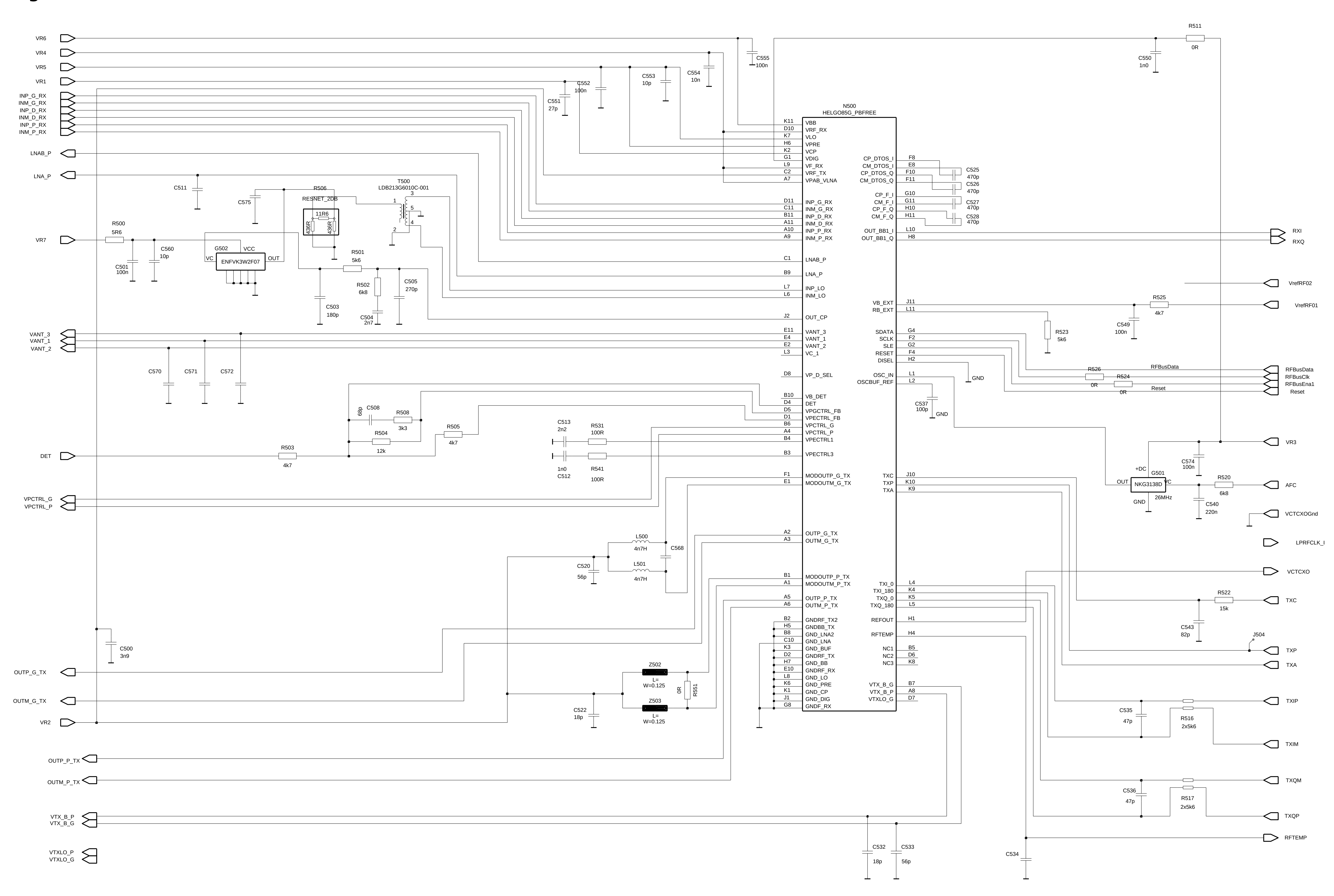
RF top level


HELGA
POWER_AMP
RF9219
FRONT_END
TXA
TXC
TXP
TXIP
TXIM
TXQP
TXQM
VCTCXO
AFC
VCTCXOGnd
RFBusClk
RFBusData
RFBusEna1
Reset
RXI
RXQ
VR1
VR2
VR3
VR4
VR5
VR6
VR7
VrefRF01
VrefRF02
RFTEMP
LPRFCLK_I
VTX_B_G
VTX_B_P
VPCTRL_G
VPCTRL_P
DET
VTXLO_G
VTXLO_P
OUTP_G_TX
OUTM_G_TX
OUTP_P_TX
OUTM_P_TX
INP_G_RX
INM_G_RX
INP_D_RX
INM_D_RX
INP_P_RX
INM_P_RX
LNAB_P
LNA_P
VANT_3
VANT_1
VANT_2
VTXB_900
VTXB_1800_1900
VPCTRL_900
VPCTRL_1800_1900
RFinP_900
RFinM_900
RFinP_1800_1900
RFinM_1800_1900
VBAT
Iref_900
Iref_1800_1900
Mode
VCTCXOTEMP
DC_sense
RFout_900
RFout_1800_1900
RX_OUTP_EGSM
RX_OUTM_EGSM
RX_OUTP_DCS
RX_OUTM_DCS
RX_OUTP_PCS
RX_OUTM_PCS
TX_IN_DCS
TX_IN_EGSM
IPA1
IPA2
TXPWRDET

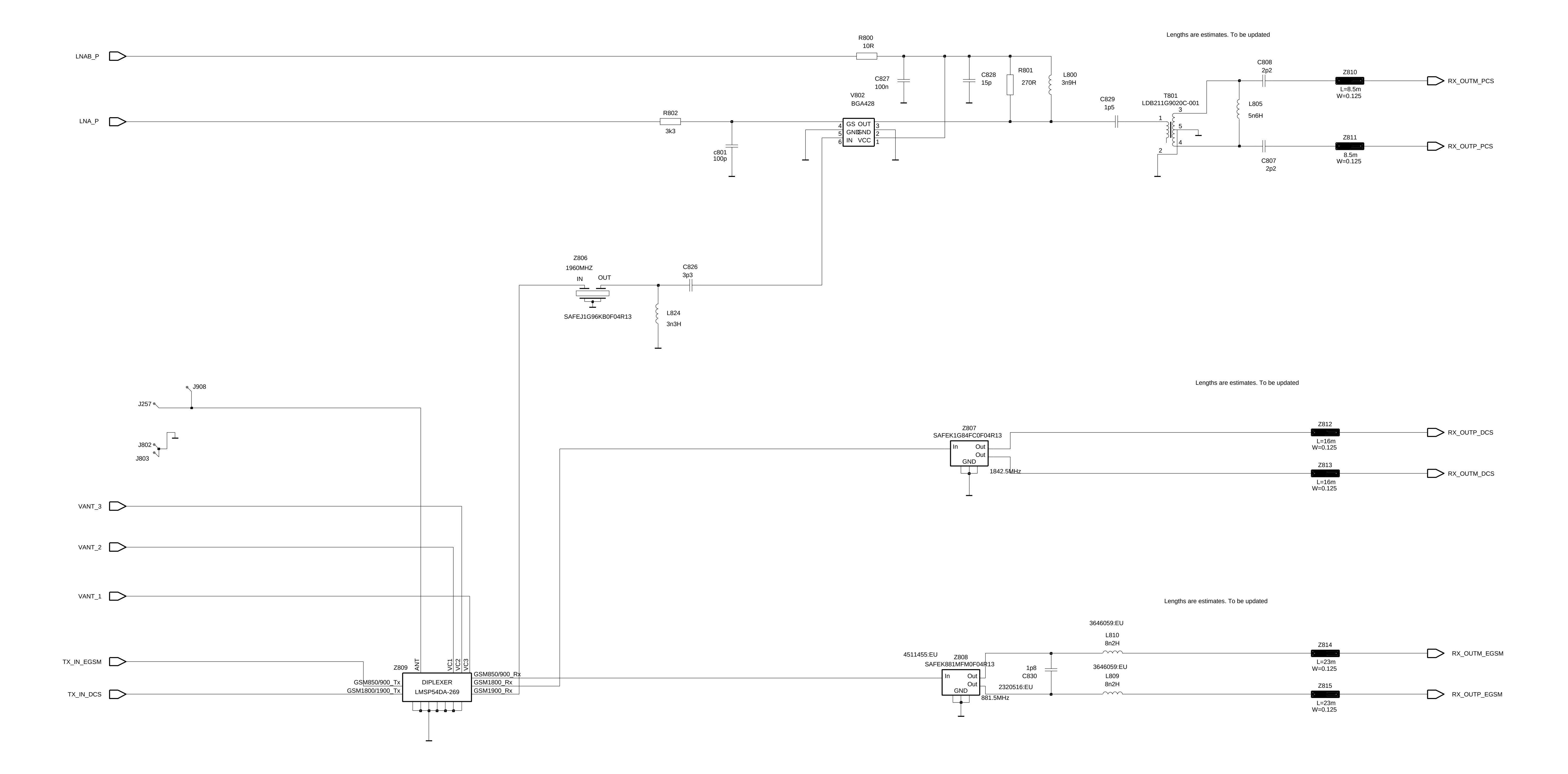
RF shields and vias



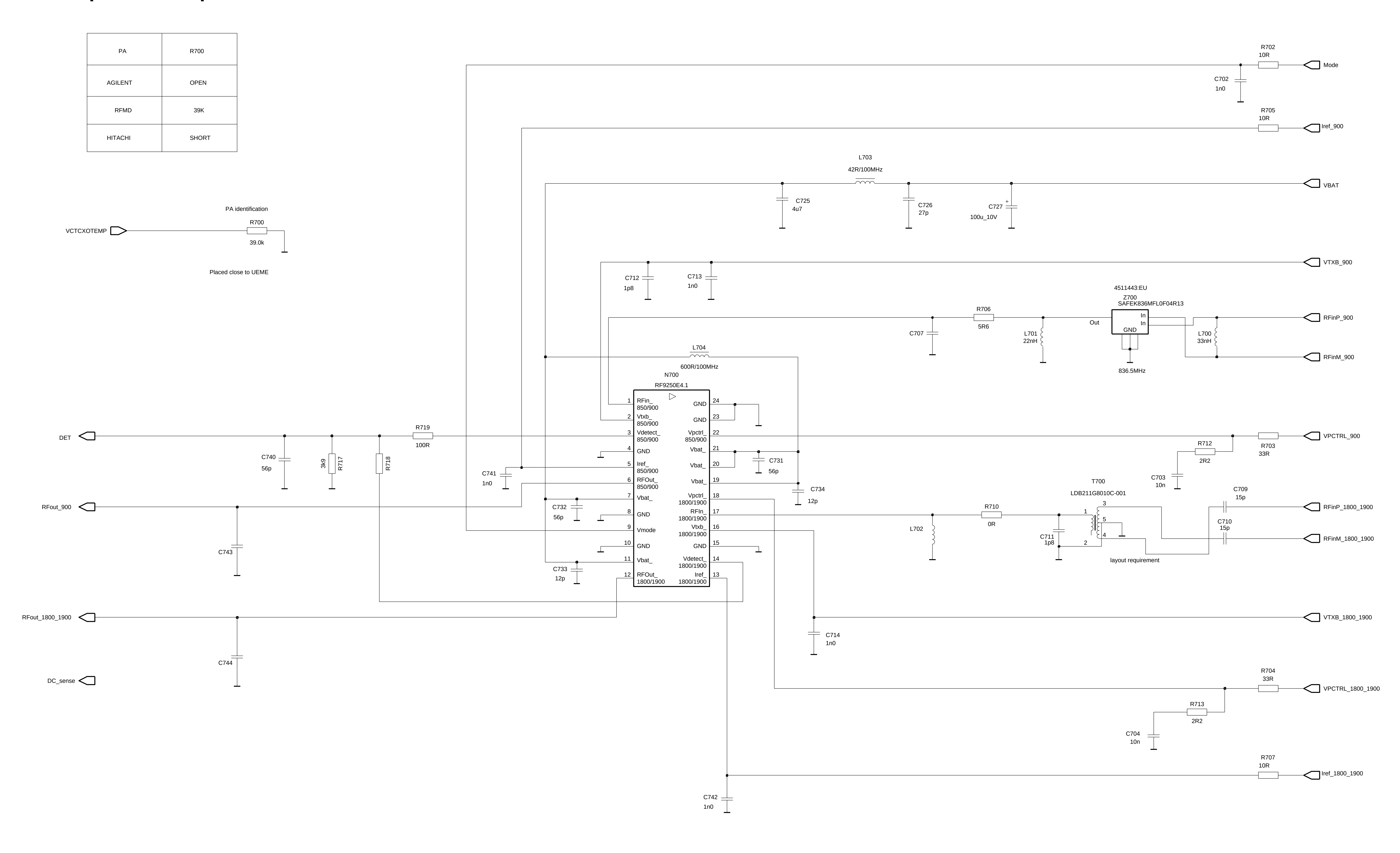
Helgo


N500
HELGO85G_PBFREE
VR6
VR4
VR5
VR1
INP_G_RX
INM_G_RX
INP_D_RX
INM_D_RX
INP_P_RX
INM_P_RX
LNAB_P
LNA_P
VR7
VANT_3
VANT_1
VANT_2
DET
VPCTRL_G
VPCTRL_P
OUTP_G_TX
OUTM_G_TX
VR2
OUTP_P_TX
OUTM_P_TX
VTX_B_P
VTX_B_G
VTXLO_P
VTXLO_G
RXI
RXQ
VrefRF02
VrefRF01
RFBusData
RFBusClk
RFBusEna1
Reset
VR3
AFC
VCTCXOGnd
LPRFCLK_I
VCTCXO
TXC
TXP
TXA
TXIP
TXIM
TXQM
TXQP
RFTEMP
T500
LDB213G6010C-001
G502
ENFVK3W2F07
G501
NKG3138D
26MHz
R506
RESNET_2DB
Z502
Z503
J504

RX front and and antenna switch

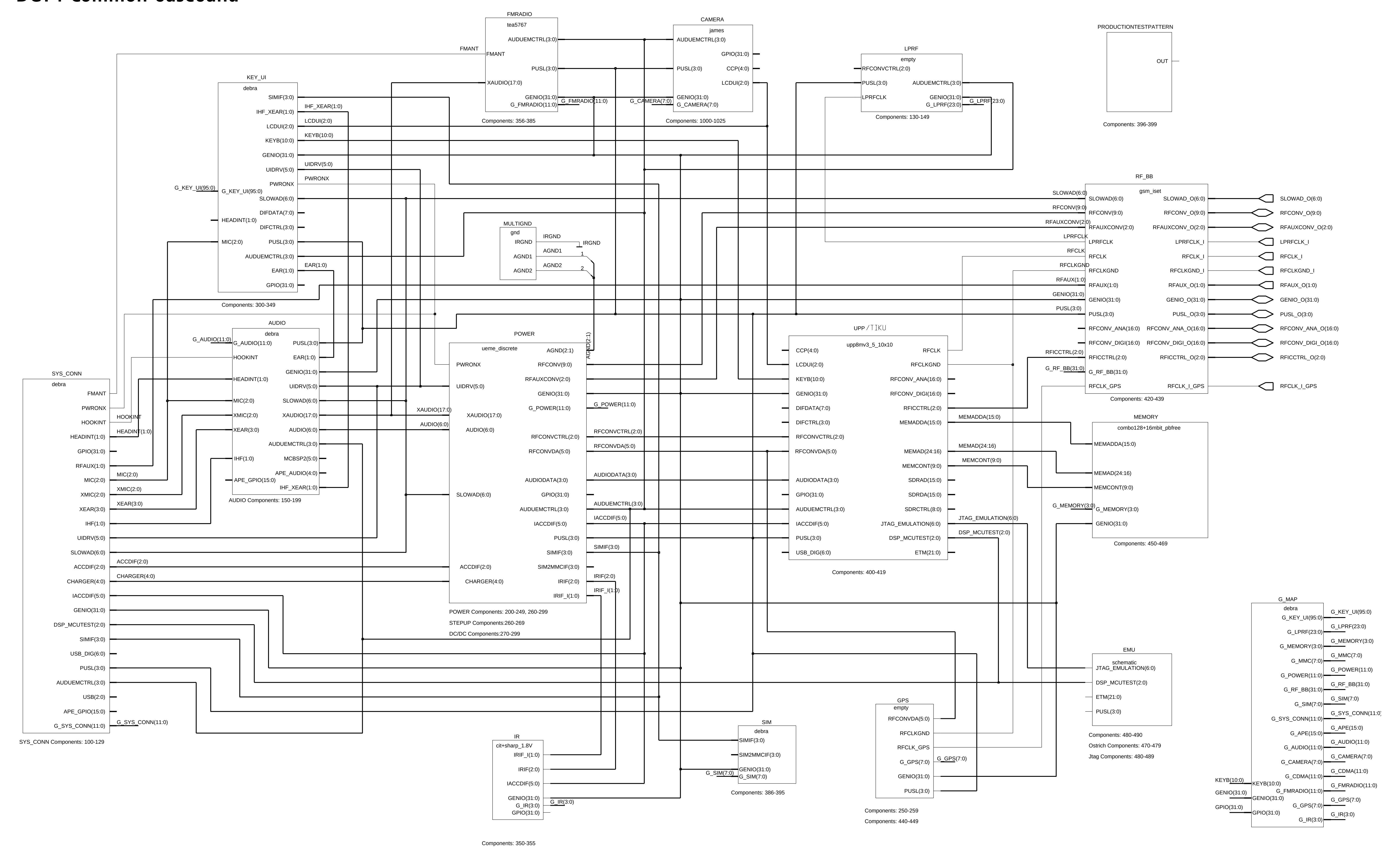


Power amplifier and power detection

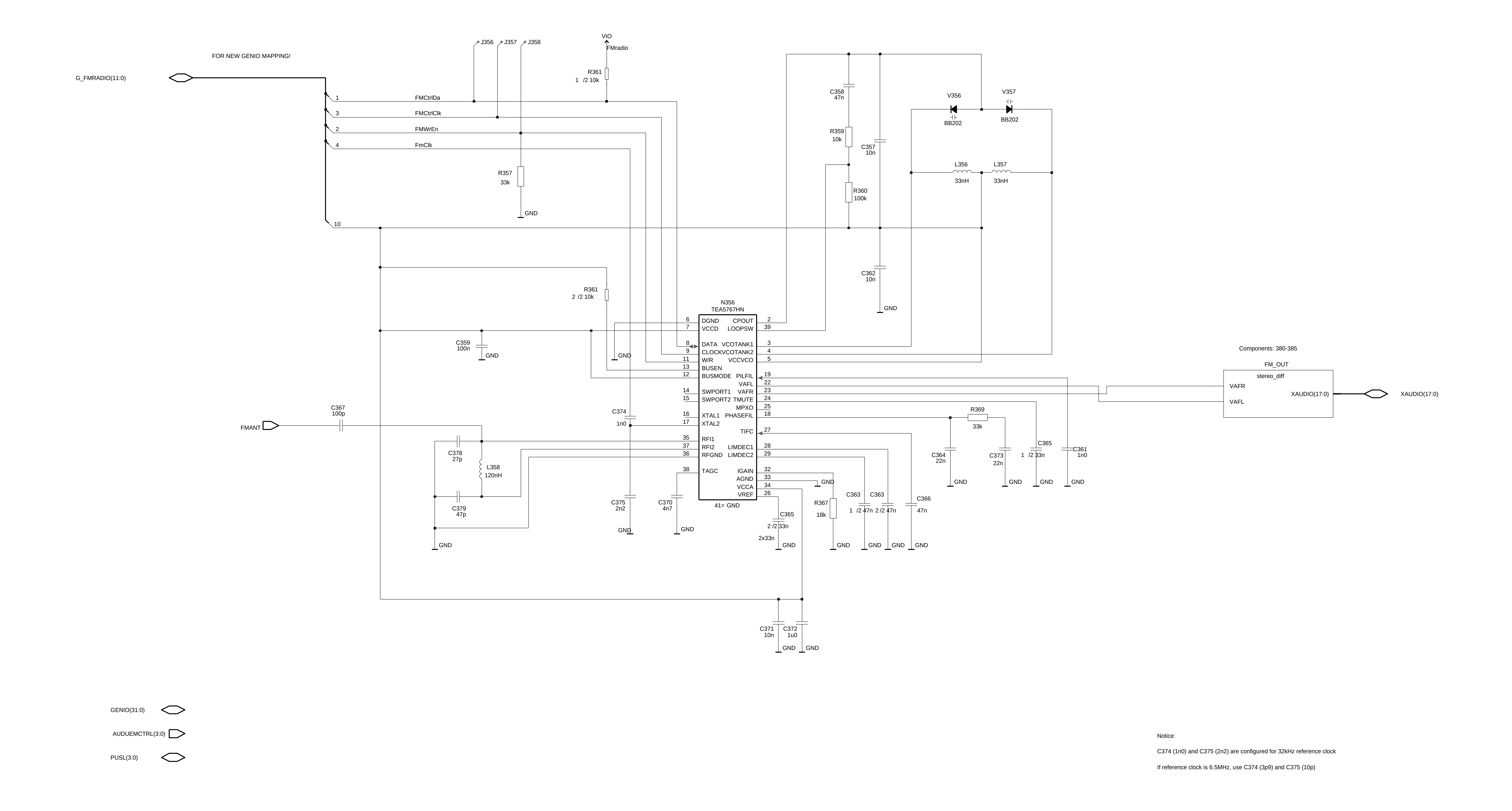


PA	R700
AGILENT	OPEN
RFMD	39K
HITACHI	SHORT

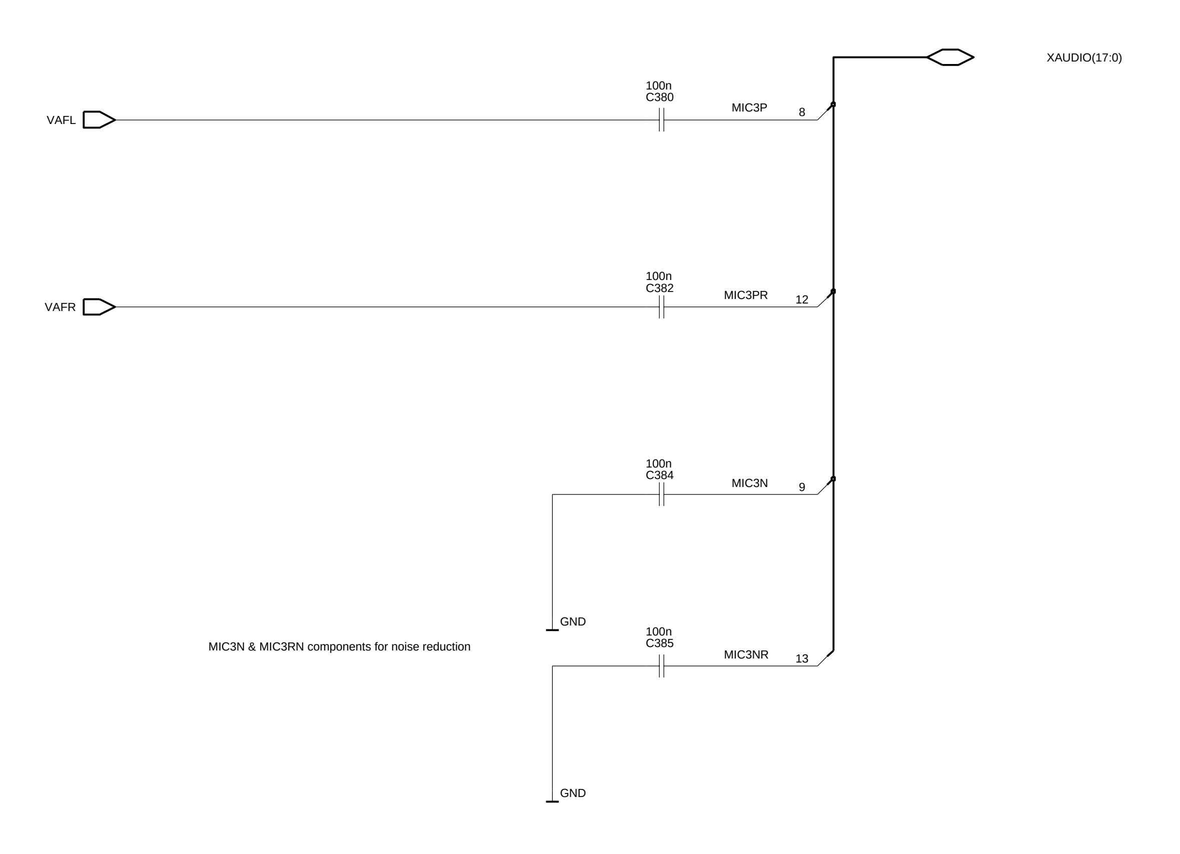
DCT4 common baseband



FM radio unit

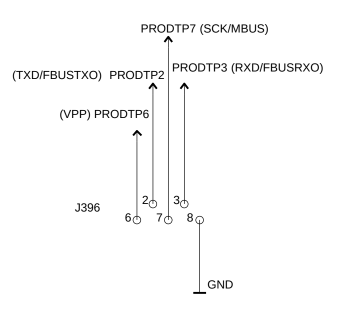


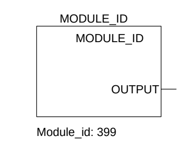
Differential stereo



5 pin production test pattern





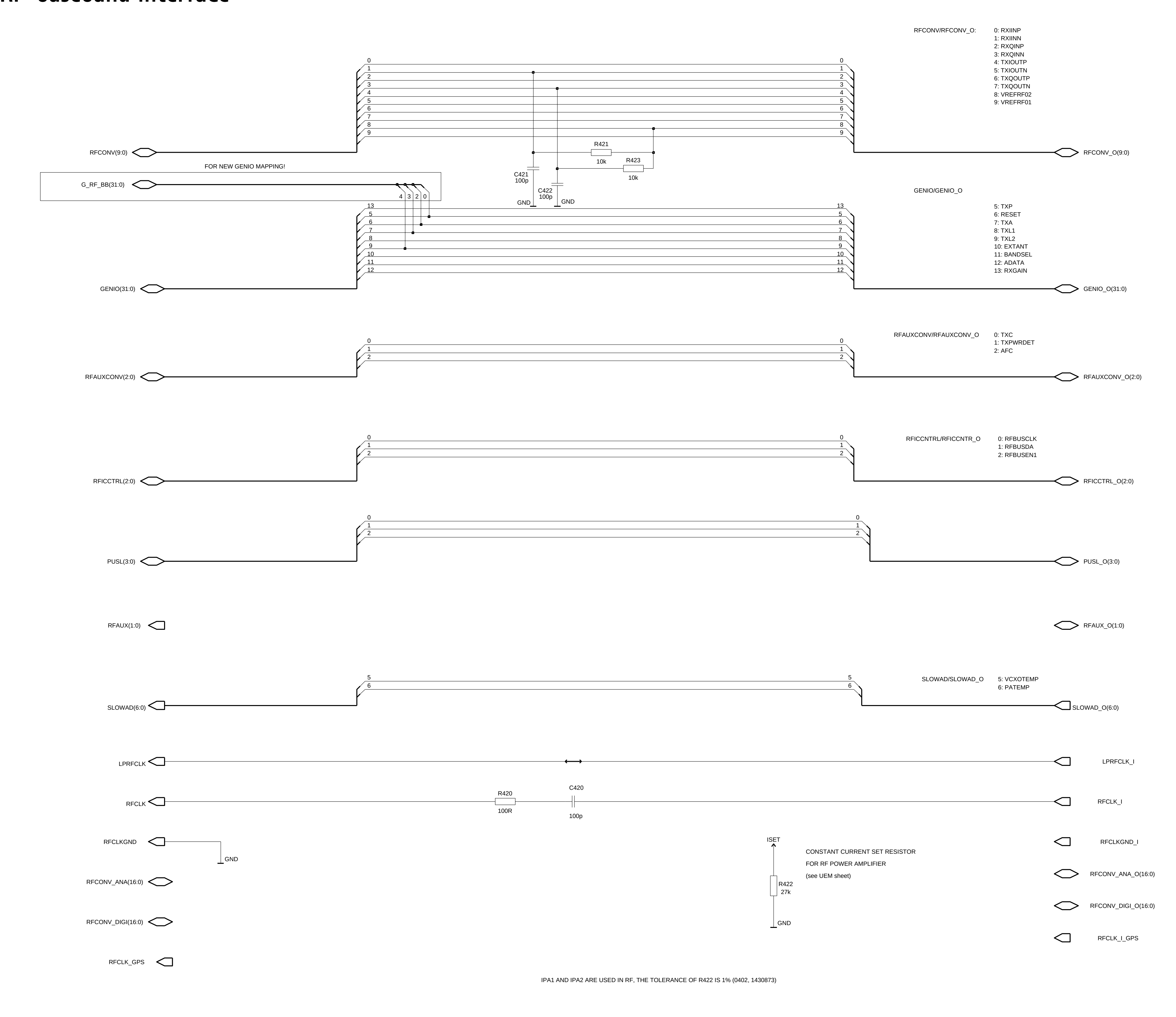


Module ID

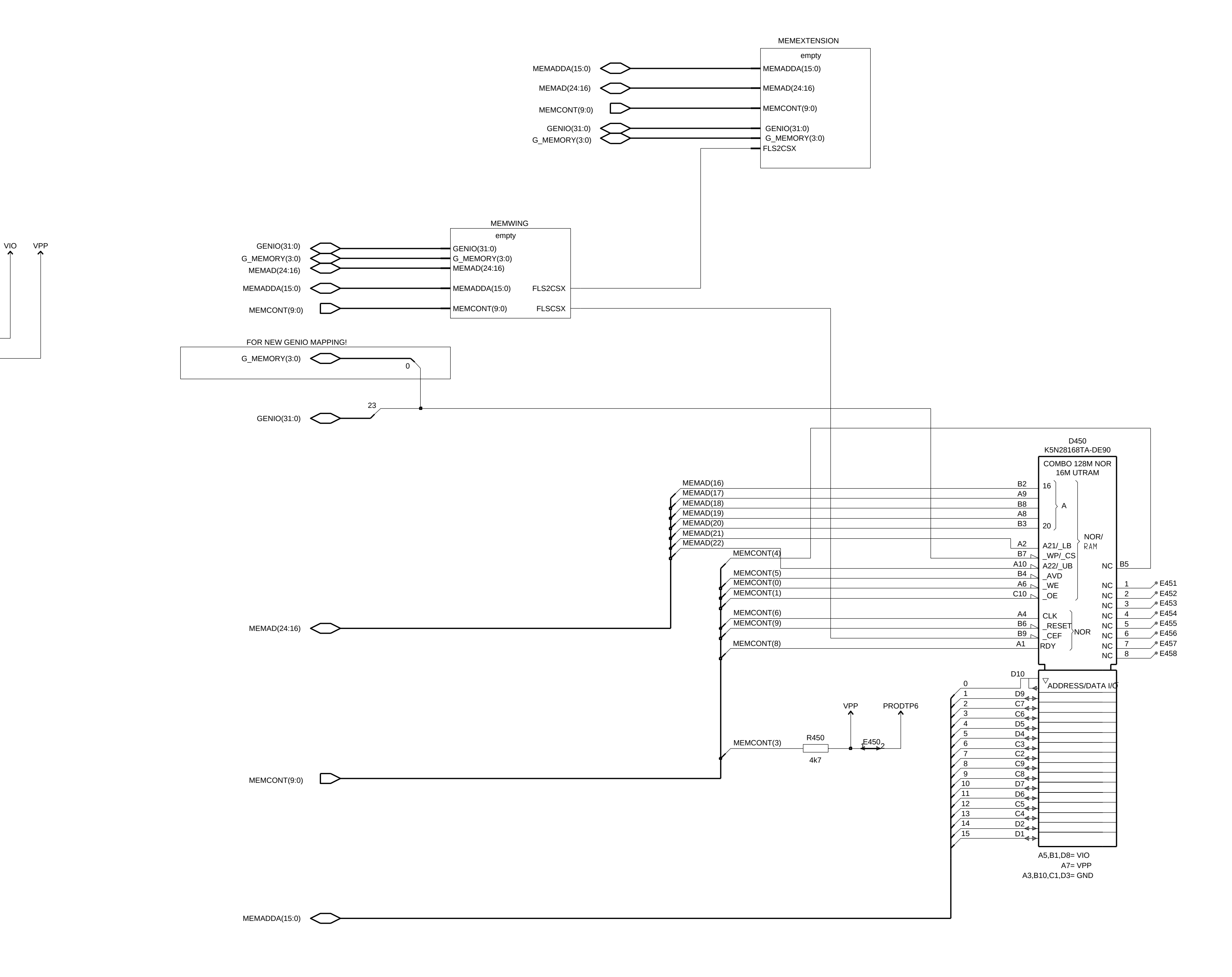
OUTPUT

X001
1
not_assembled
GND

GSM RF-baseband interface



Combo memory 128+16 Mbt pb free

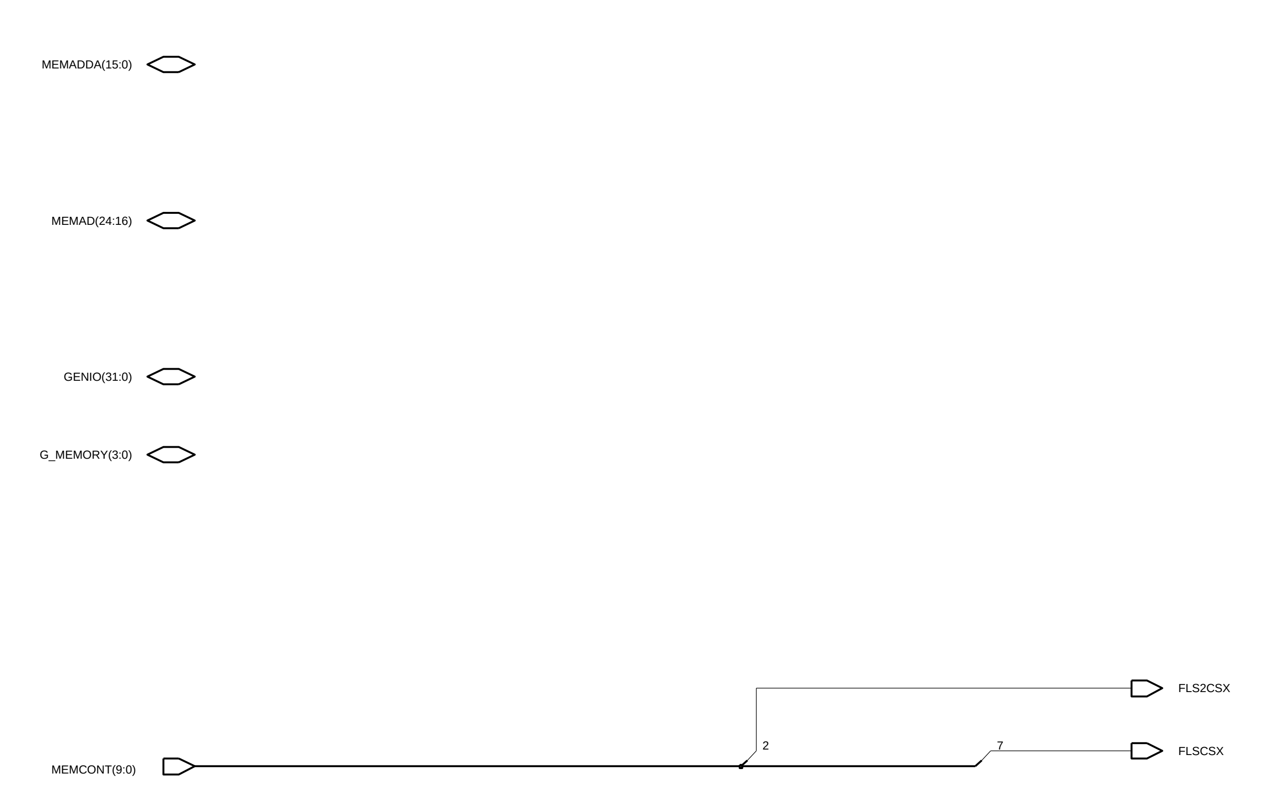


Discrete capacitors

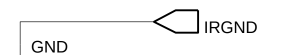


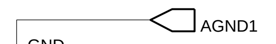


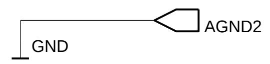
Empty wing sheets



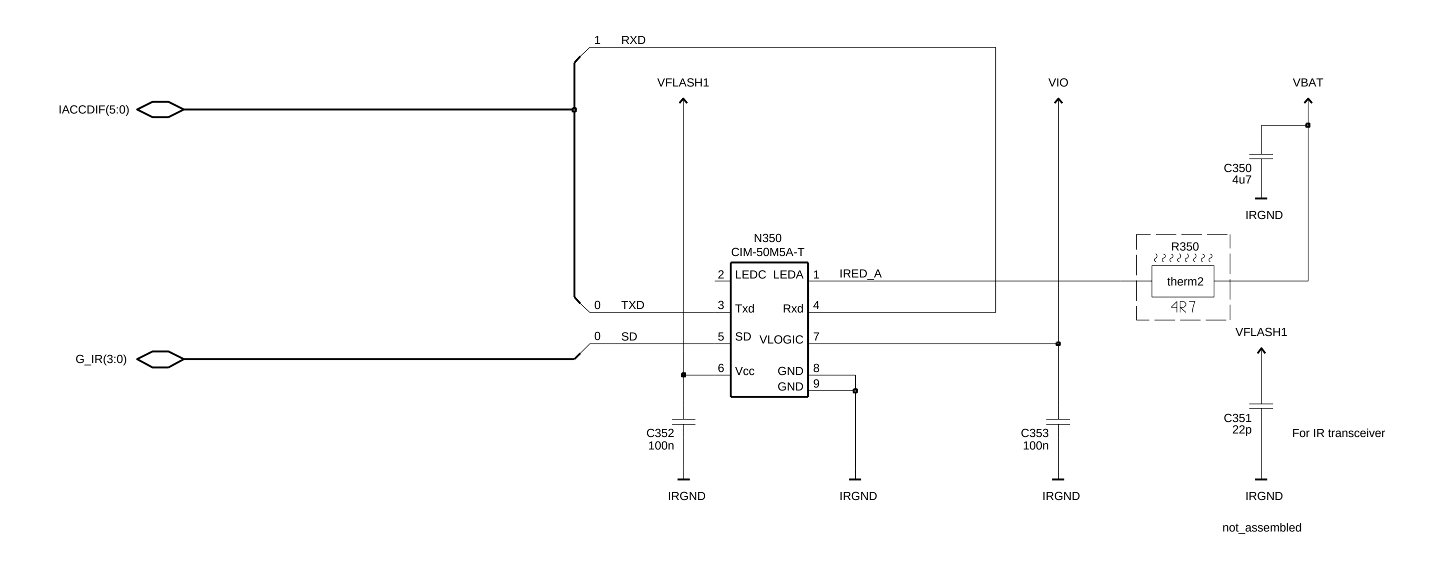
Multi GND



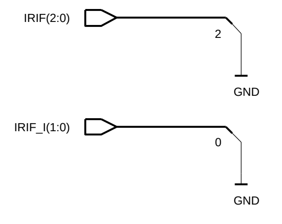




IR Module 1.8V



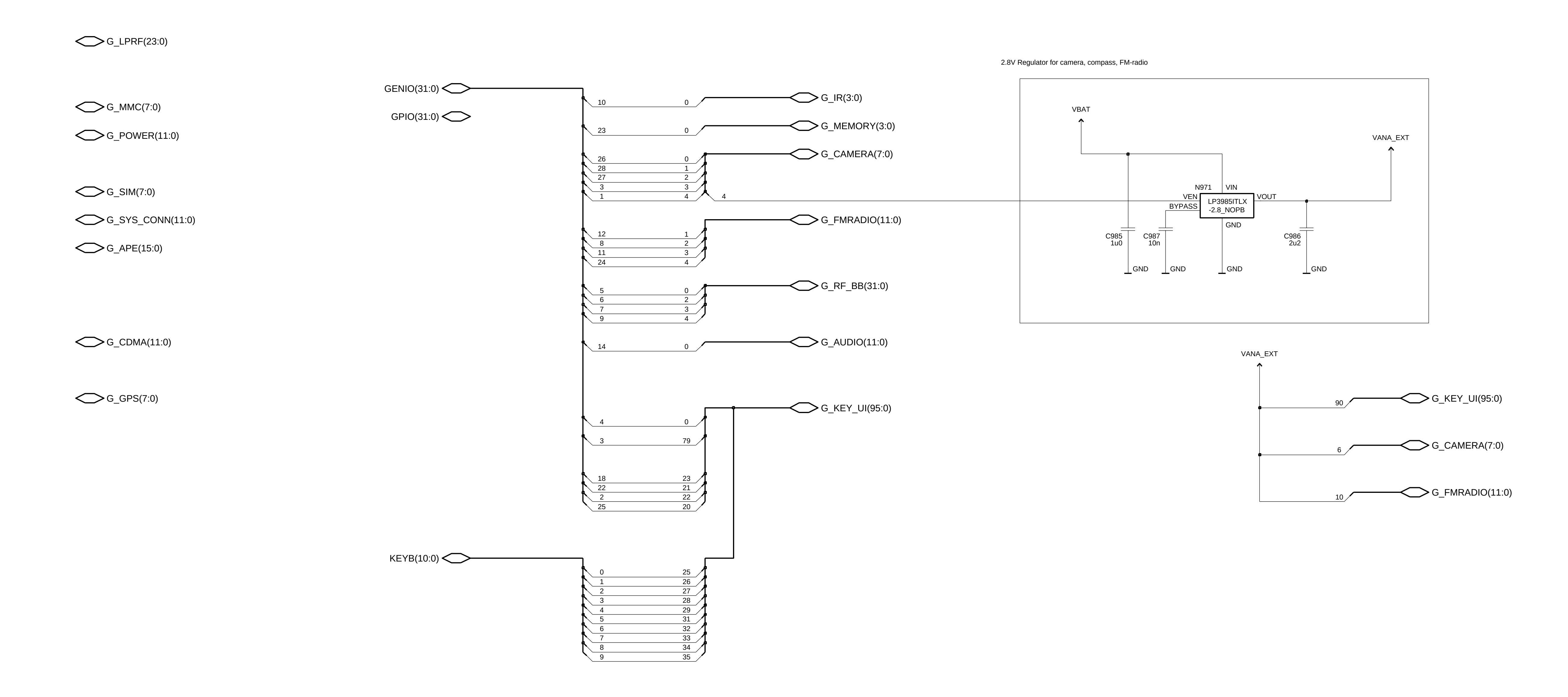
GENIO(31:0)
GPIO(31:0)



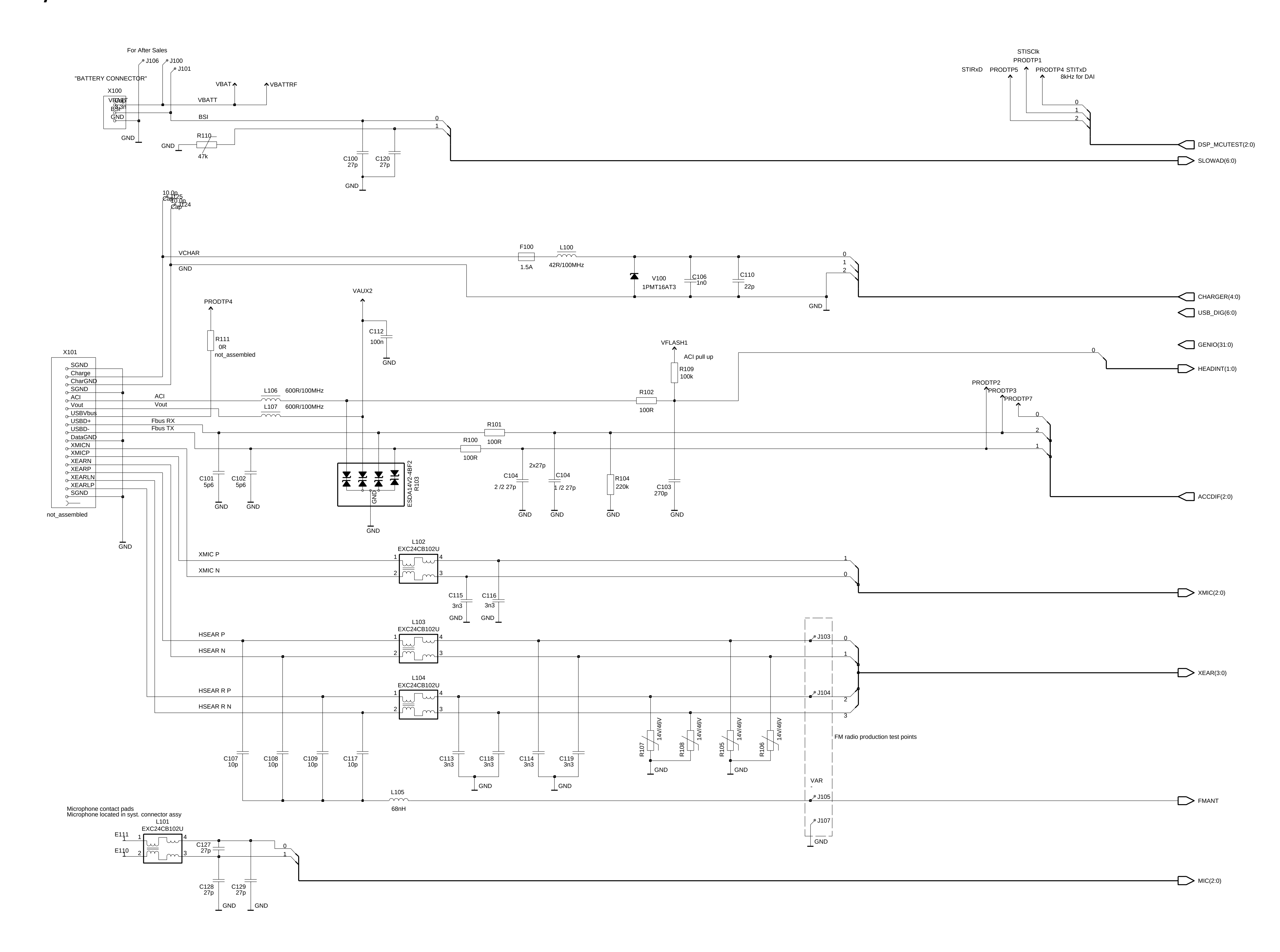
Used referenses

C	350 - 353
N	350
R	350

G-map


G_LPRF(23:0)
G_MMC(7:0)
G_POWER(11:0)
G_SIM(7:0)
G_SYS_CONN(11:0)
G_APE(15:0)
G_CDMA(11:0)
G_GPS(7:0)
GENIO(31:0)
GPIO(31:0)
KEYB(10:0)
G_IR(3:0)
G_MEMORY(3:0)
G_CAMERA(7:0)
G_FMRADIO(11:0)
G_RF_BB(31:0)
G_AUDIO(11:0)
G_KEY_UI(95:0)
2.8V Regulator for camera, compass, FM-radio
VBAT
VANA_EXT
N971
VIN
VEN
BYPASS
VOUT
LP3985ITLX
-2.8_NOPB
GND
C985
1u0
C987
10n
C986
2u2
VANA_EXT
G_KEY_UI(95:0)
G_CAMERA(7:0)
G_FMRADIO(11:0)

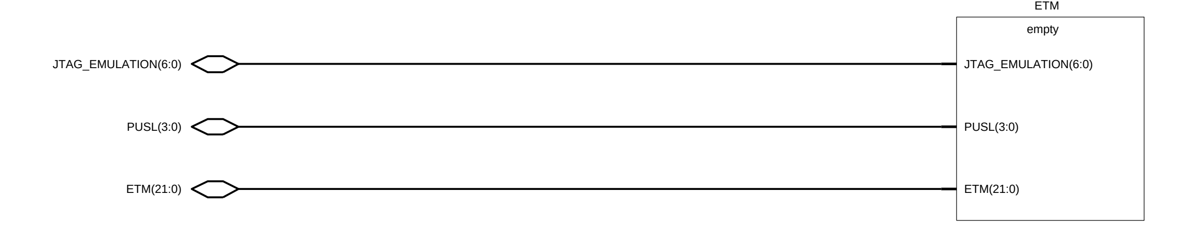
System connector



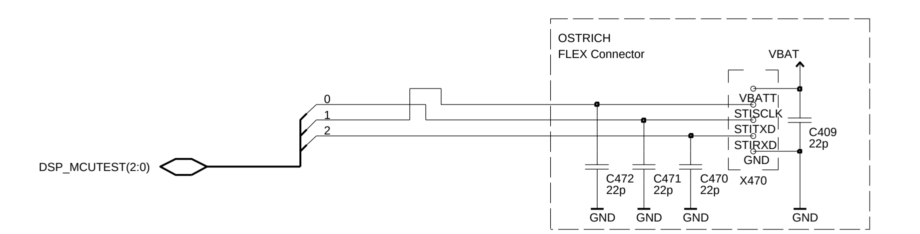
Test and emulator interface



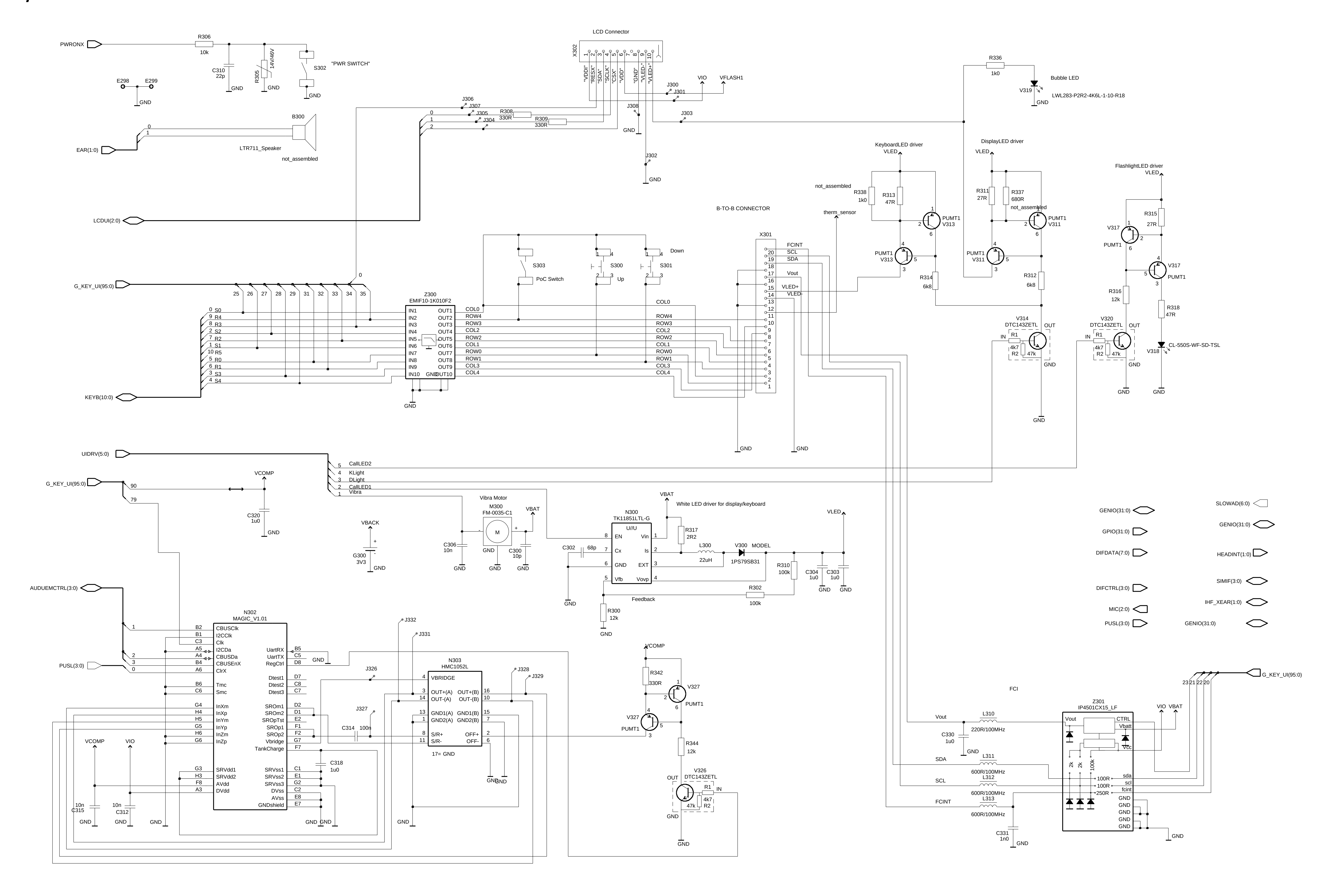




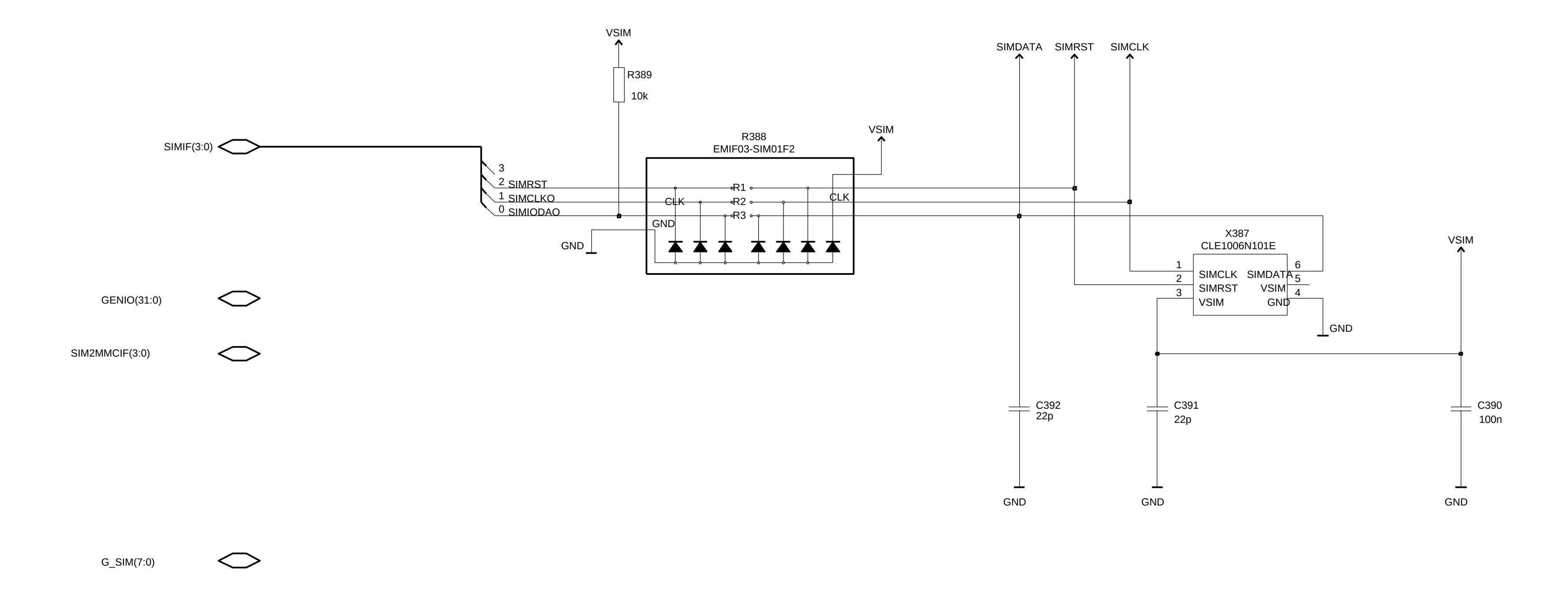
Connector based Ostrich test interface



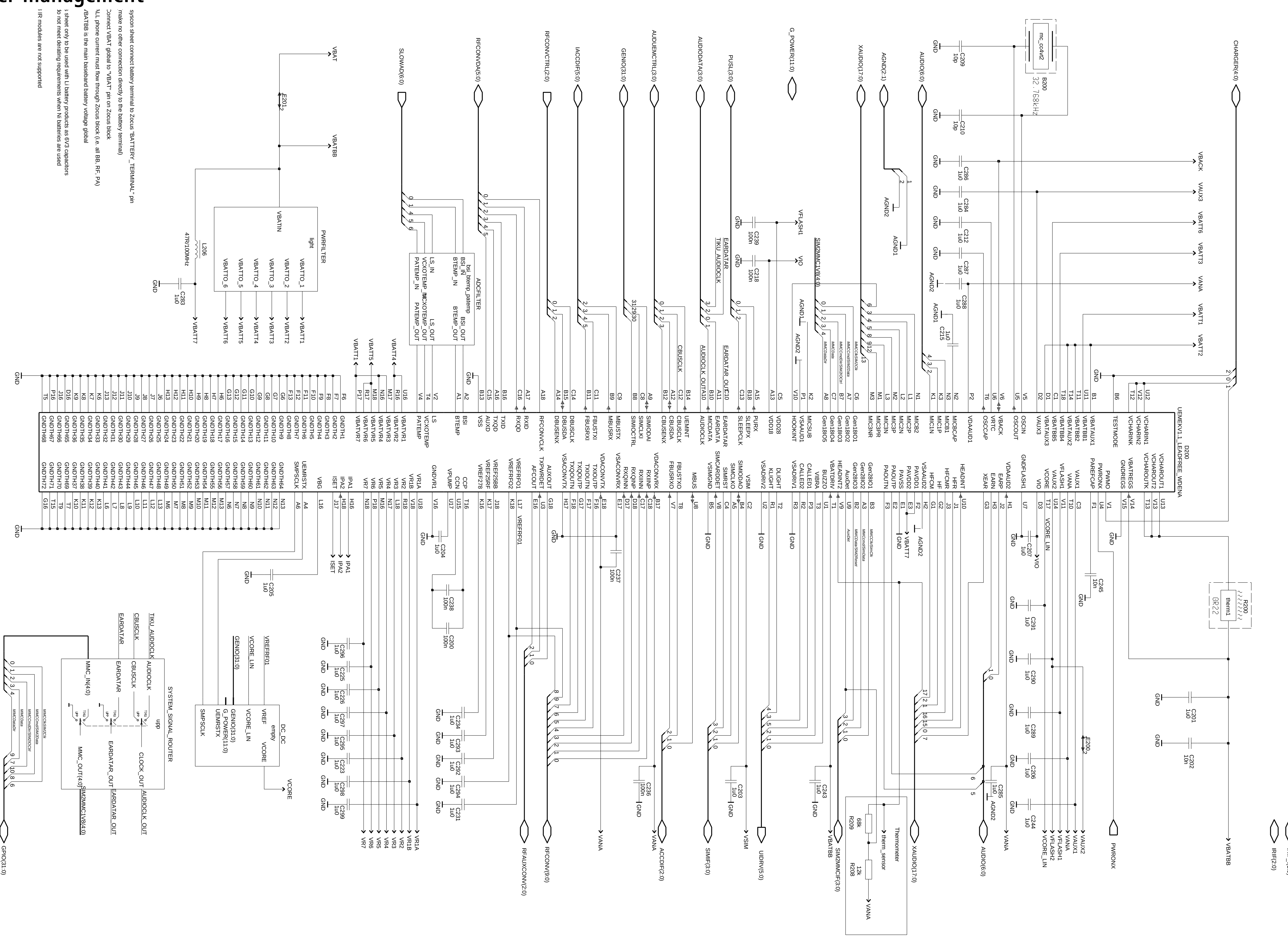
Key UI


PWRONX
R306
10k
C310
22p
R305
14V/46V
S302
"PWR SWITCH"
E298
E299
GND
LCD Connector
X302
B300
LTR711_Speaker
not_assembled
EAR(1:0)
LCDUI(2:0)
G_KEY_UI(95:0)
KEYB(10:0)
J306
J307
J305
J304
R308
330R
R309
330R
J300
J301
VIO
VFLASH1
J308
J303
J302
R336
1k0
Bubble LED
V319
LWL283-P2R2-4K6L-1-10-R18
KeyboardLED driver
DisplayLED driver
FlashlightLED driver
VLED
not_assembled
therm_sensor
R338
1k0
R313
47R
PUMT1
V313
R311
27R
R337
680R
V311
R315
27R
V317
R314
6k8
R312
6k8
R316
12k
R318
47R
B-TO-B CONNECTOR
X301
FCINT
SCL
SDA
Vout
VLED+
VLED-
S303
PoC Switch
S300
Up
S301
Down
Z300
EMIF10-1K010F2
COL0
ROW4
ROW3
COL2
ROW2
COL1
ROW0
ROW1
COL3
COL4
V314
DTC143ZETL
V320
DTC143ZETL
V318
CL-550S-WF-SD-TSL
UIDRV(5:0)
CallLED2
KLight
DLight
CallLED1
Vibra
VCOMP
C320
1u0
Vibra Motor
M300
FM-0035-C1
VBAT
VBACK
G300
3V3
C306
10n
C300
10p
VBAT
White LED driver for display/keyboard
N300
TK11851LTL-G
R317
2R2
L300
22uH
V300
1PS79SB31
MODEL
C302
68p
R310
100k
C304
1u0
C303
1u0
R302
100k
Feedback
R300
12k
GENIO(31:0)
GPIO(31:0)
DIFDATA(7:0)
DIFCTRL(3:0)
MIC(2:0)
PUSL(3:0)
SLOWAD(6:0)
HEADINT(1:0)
SIMIF(3:0)
IHF_XEAR(1:0)
AUDUEMCTRL(3:0)
N302
MAGIC_V1.01
J332
J331
N303
HMC1052L
J326
J327
C314
100n
J328
J329
C318
1u0
VCOMP
VIO
C315
10n
C312
10n
17= GND
R342
330R
V327
PUMT1
R344
12k
V326
DTC143ZETL
FCI
Z301
IP4501CX15_LF
L310
220R/100MHz
L311
600R/100MHz
L312
600R/100MHz
L313
600R/100MHz
C330
1u0
C331
1n0
G_KEY_UI(95:0)

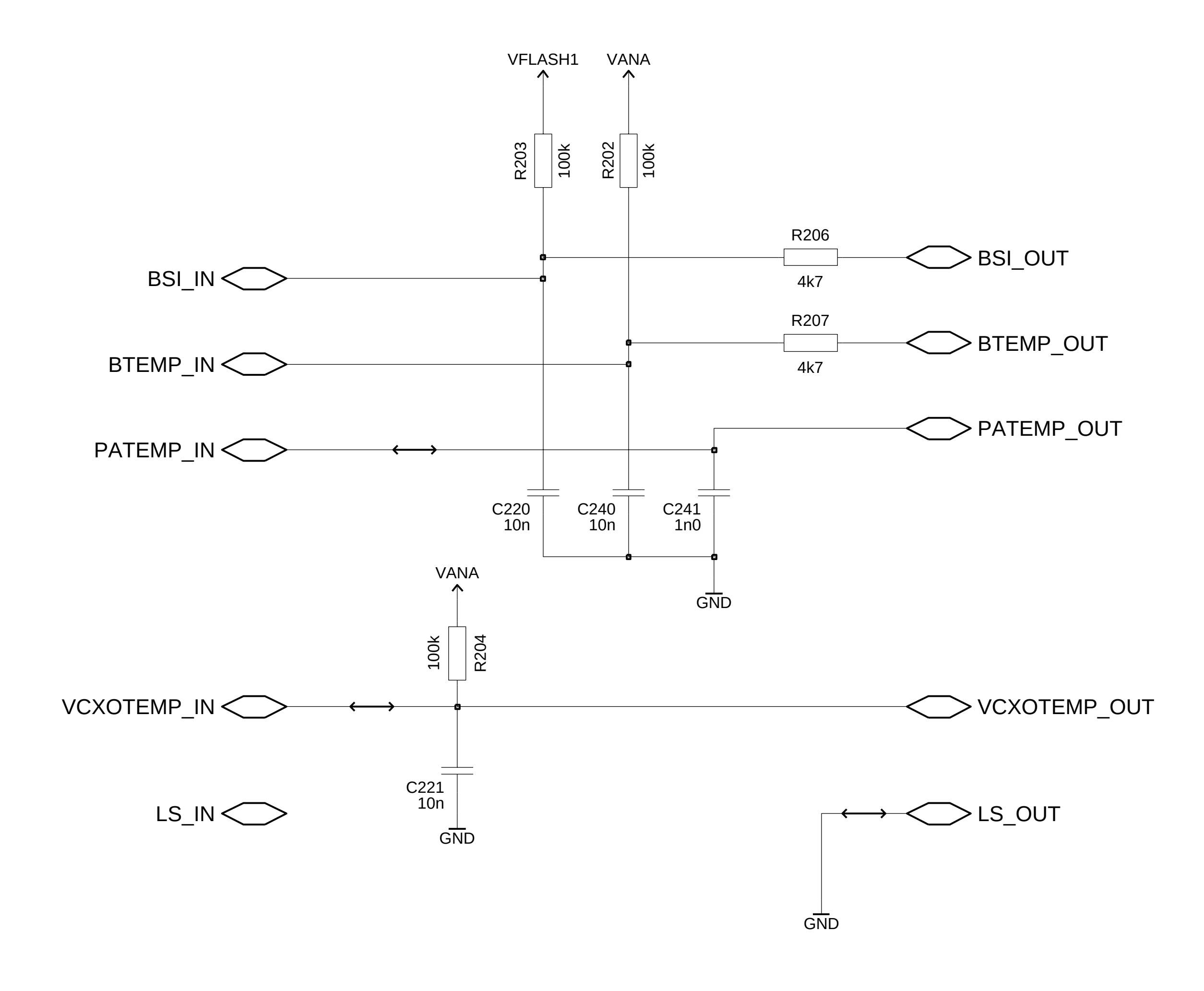
SIM reader


VSIM
R389
10k
SIMIF(3:0)
R388
EMIF03-SIM01F2
VSIM
SIMRST
SIMCLKO
SIMIODAO
CLK
R1
R2
R3
CLK
GND
GND
SIMDATA
SIMRST
SIMCLK
X387
CLE1006N101E
SIMCLK
SIMRST
VSIM
SIMDATA
VSIM
GND
GND
VSIM
GENIO(31:0)
SIM2MMCIF(3:0)
C392
22p
C391
22p
C390
100n
GND
GND
GND
G_SIM(7:0)

UEME power management

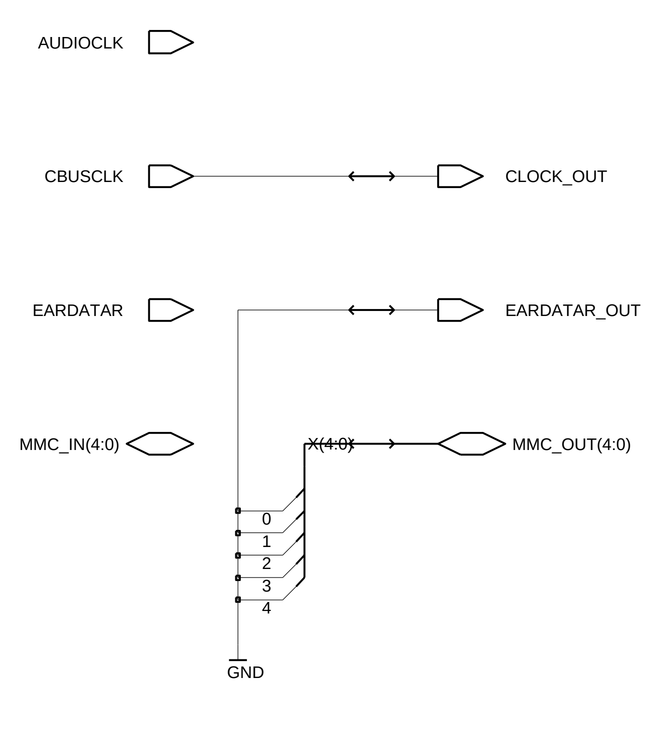


UEME ADC filter block

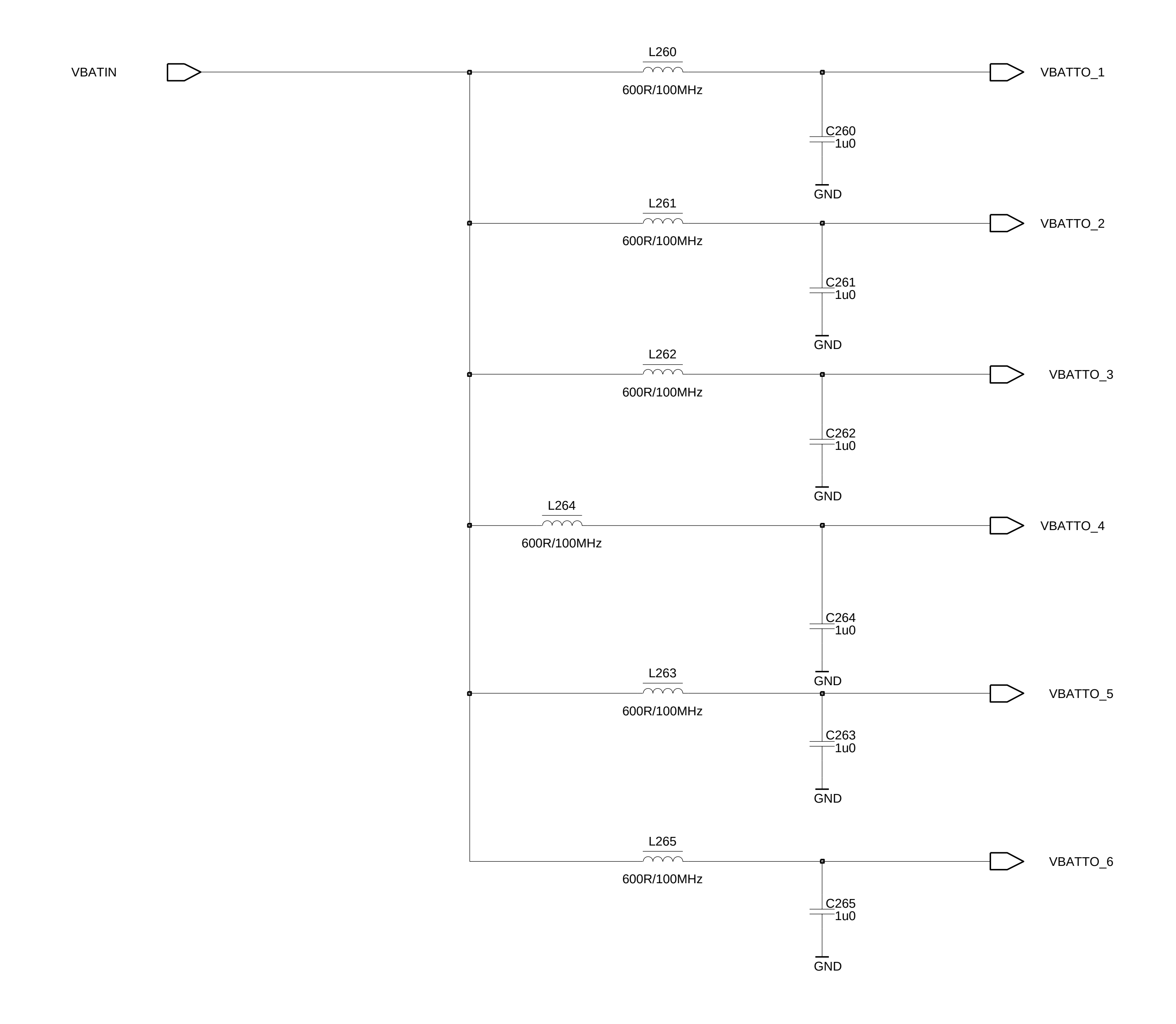


NOTE: Helga RF drives PATEMP directly
so PATEMP does not need a pullup

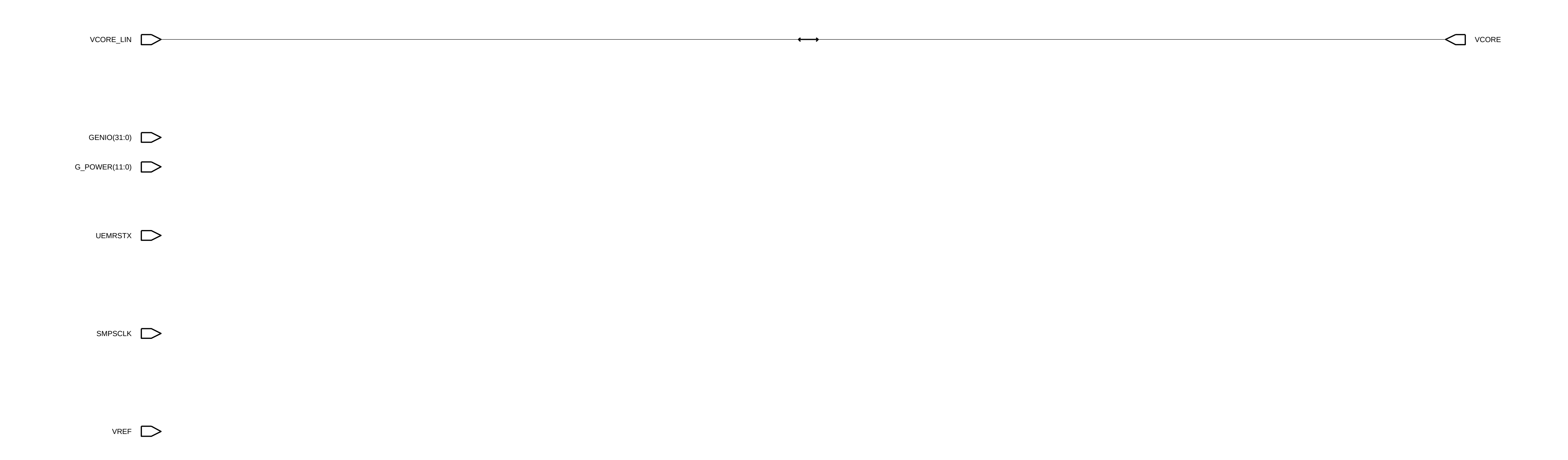
Digital ASIC-dependant Signal routing UPP systems



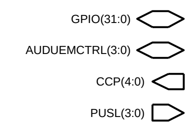
Light filtering



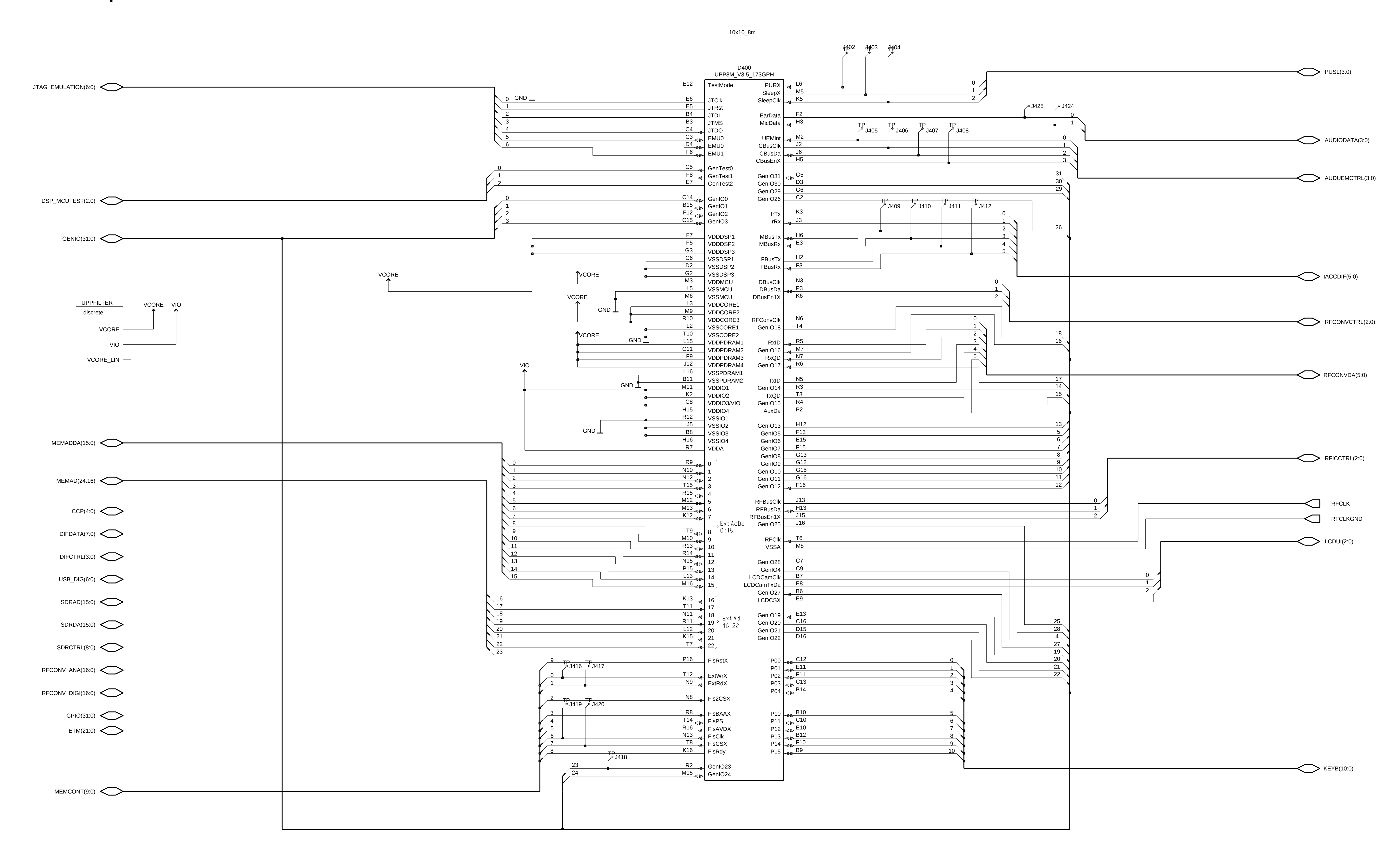
DC/DC converter



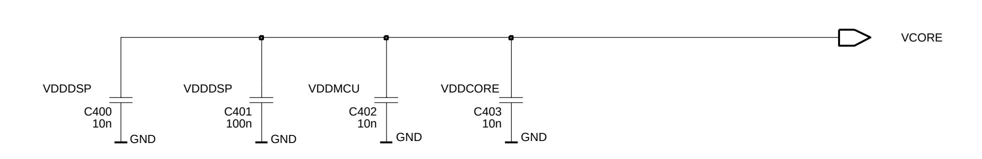
Camera



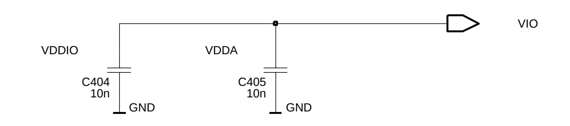
UPP 8M implementation



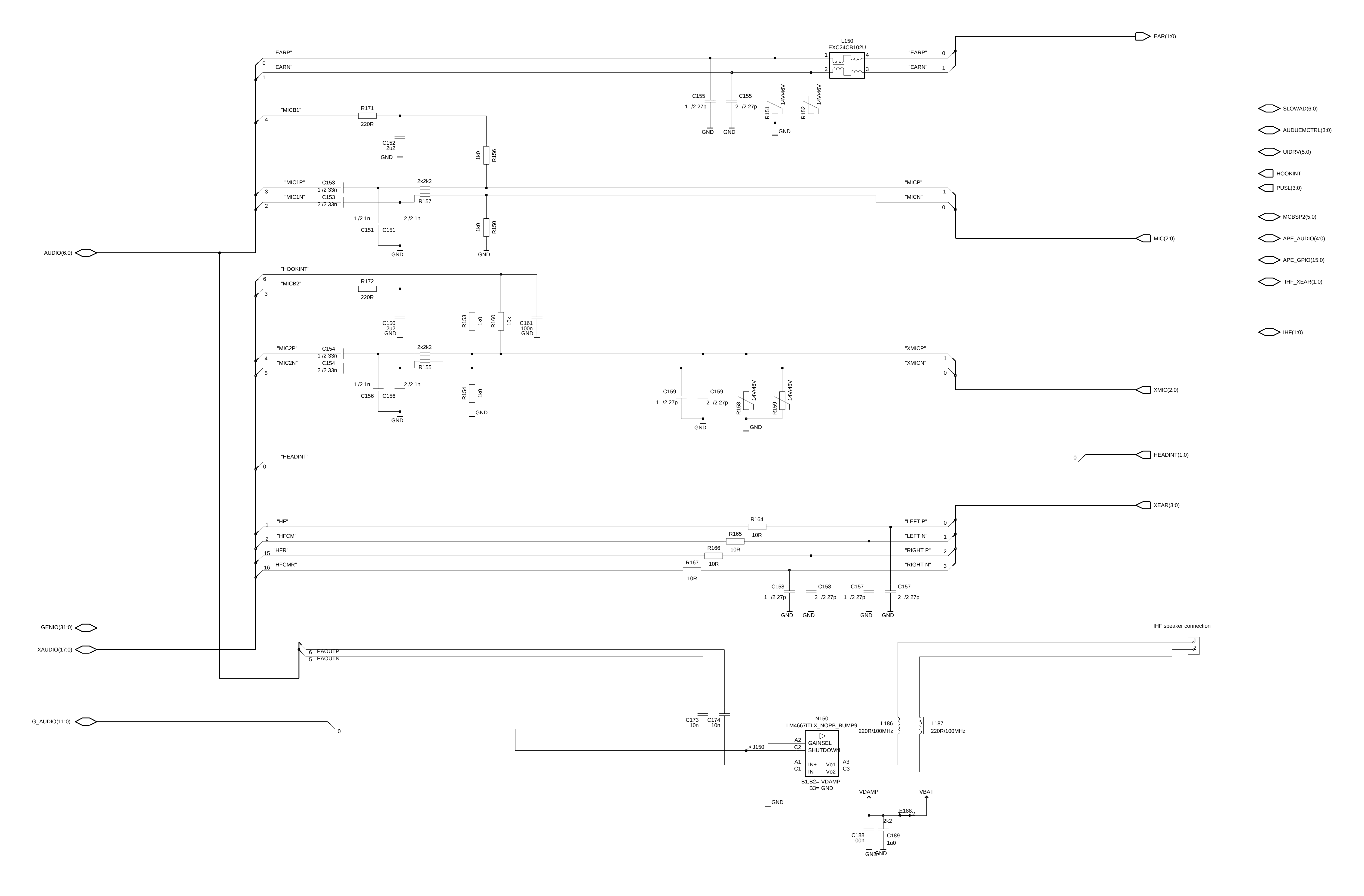
Discrete decoupling capacitors for UPP



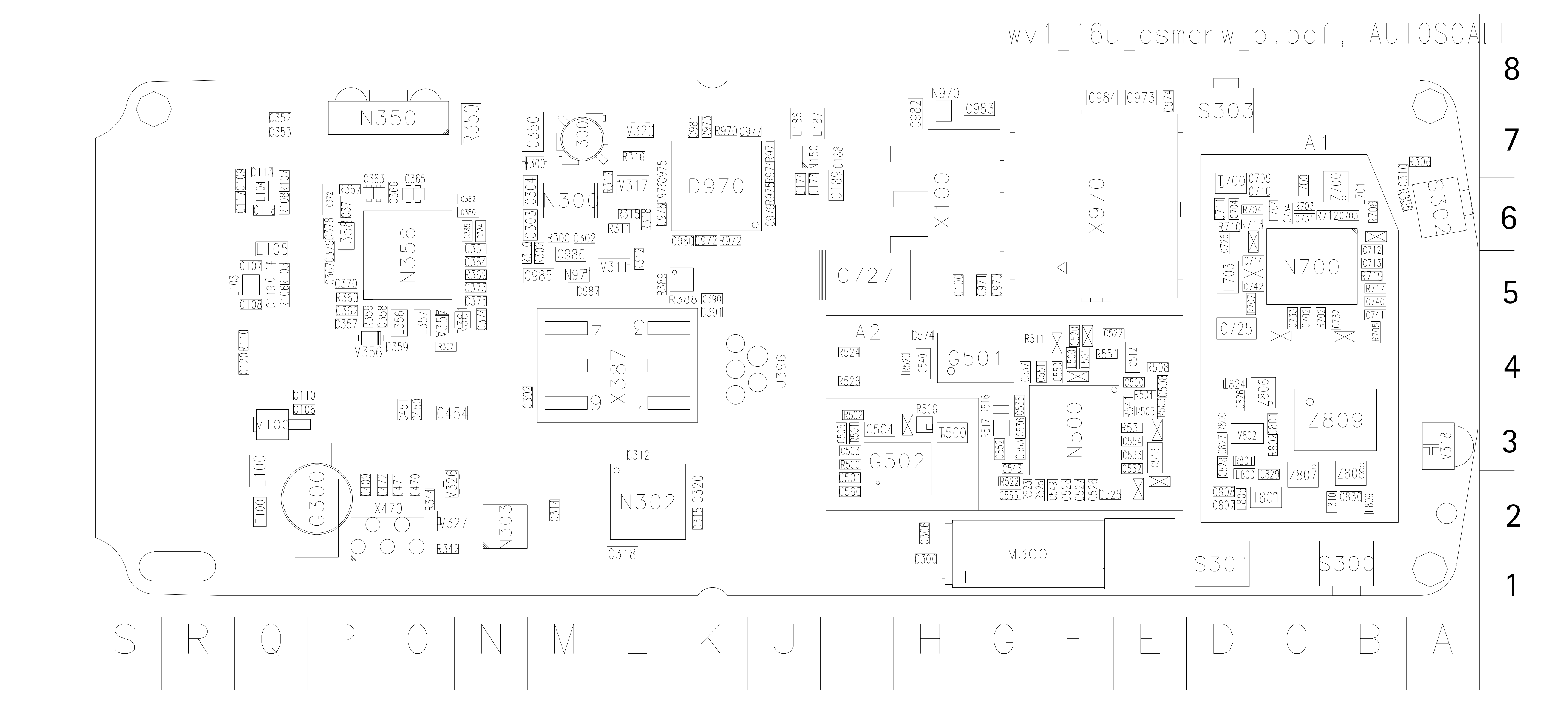
VCORE_LIN



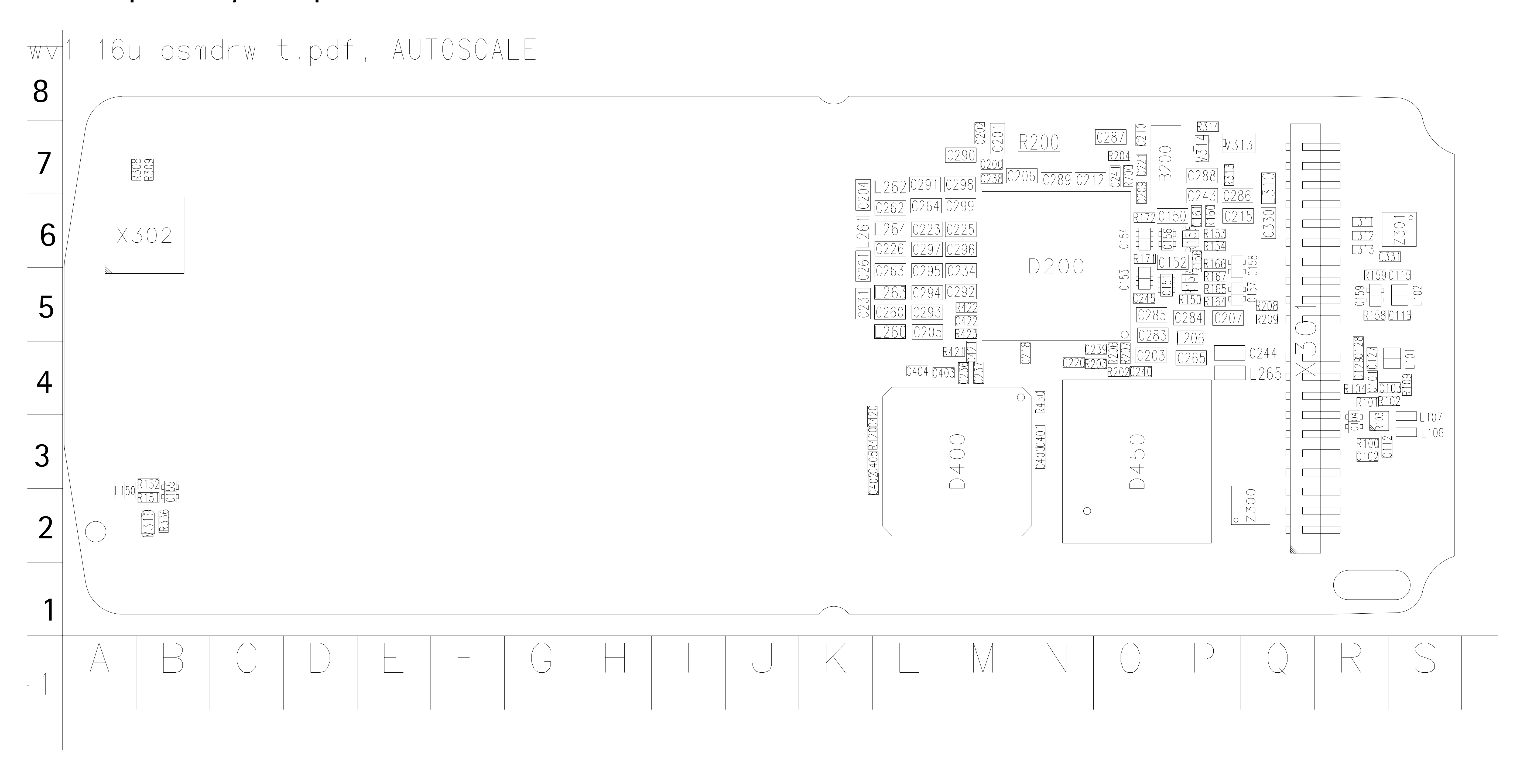
Audio


L150
EXC24CB102U
"EARP"
"EARN"
"MICB1"
R171
220R
C152
2u2
C155
R151
R152
14V/46V
"MIC1P"
"MIC1N"
C153
R157
R156
R150
C151
"MICP"
"MICN"
AUDIO(6:0)
EAR(1:0)
SLOWAD(6:0)
AUDUEMCTRL(3:0)
UIDRV(5:0)
HOOKINT
PUSL(3:0)
MCBSP2(5:0)
APE_AUDIO(4:0)
APE_GPIO(15:0)
IHF_XEAR(1:0)
IHF(1:0)
MIC(2:0)
"HOOKINT"
"MICB2"
R172
C150
R153
R160
C161
100n
"MIC2P"
"MIC2N"
C154
R155
C156
R154
C159
R158
R159
"XMICP"
"XMICN"
XMIC(2:0)
"HEADINT"
HEADINT(1:0)
XEAR(3:0)
"HF"
"HFCM"
"HFR"
"HFCMR"
R164
R165
R166
R167
10R
"LEFT P"
"LEFT N"
"RIGHT P"
"RIGHT N"
C158
C157
GND
GENIO(31:0)
XAUDIO(17:0)
PAOUTP
PAOUTN
IHF speaker connection
G_AUDIO(11:0)
C173
C174
10n
N150
LM4667ITLX_NOPB_BUMP9
GAINSEL
SHUTDOWN
IN+
IN-
Vo1
Vo2
B1,B2= VDAMP
B3= GND
J150
L186
L187
220R/100MHz
VDAMP
VBAT
R188
2k2
C188
C189
1u0

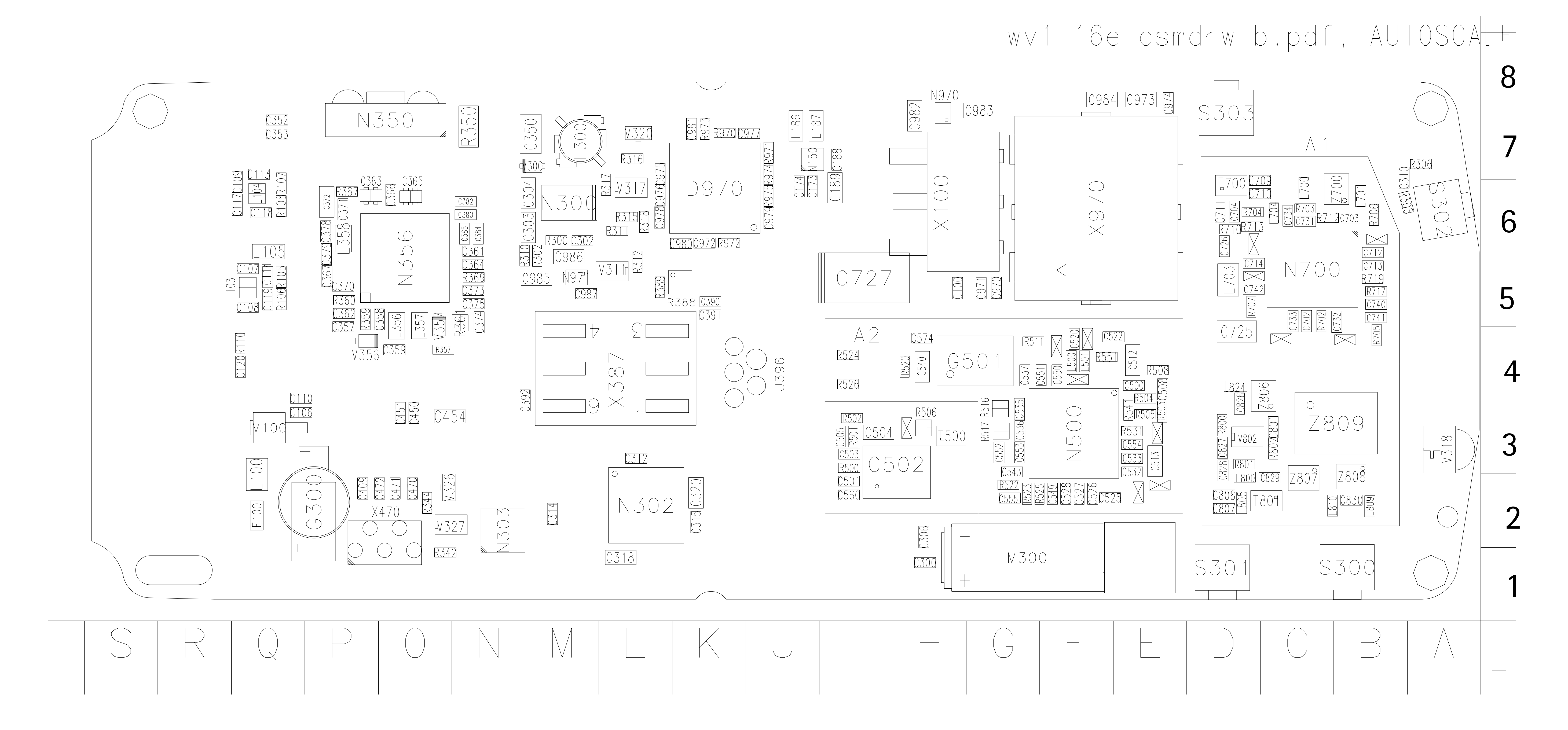
NPL-4, component layout, bottom



NPL-4, component layout, top



NPL-5, component layout, bottom



NPL-5, component layout, top

